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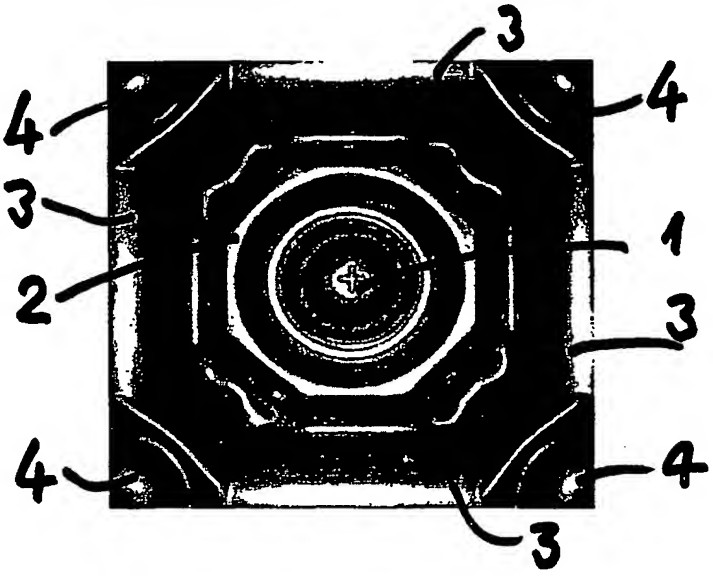
(54) Title: WIDE BAND SOUND DIFFUSER WITH SELF REGULATED LOW FREQUENCY ABSORPTION AND METHODS OF MOUNTING IT



(57) Abstract: The present invention relates to an acoustical diffuser device, said apparatus comprising the main body from Fig. 1 and two lateral rigid supports (5), glued to the inside of the said diffuser which lateral supports are received , like a drawer , by two wooden rails (6), section T. The two wooden rails (6) are simply mounted on the wall or ceiling surface with screws or nails. The main diffuser body with his two drivers is mounted just like a drawer toward the two rails T or is embedded into the complex endless-screw containing base from Fig. 6 (1, 9, 10, 11, 12, 13, 14, and 15). The main body is composed from three basically 3D shapes (1, 2, 3, and 4). Each fourth diffusers, displays together a new 3D shapes at their nearest point, Fig. 10, 11 and 12. This diffuser may be used in any kind of room and geometry where the critical listening is needed such live or recorded music and music teaching. His main advantage is that it is working simultaneously in two ways: as a clean diffuser for mid and high frequencies and as a self controlled absorber, below 250 Hz, for low frequencies, as from Fig. 1 and related figures and very low frequencies when the apparatus from Fig. 6 is used. This is possible, because being mounted in two new different ways, his compartmented volumes behind the diffuser surfaces works like a complex Helmholtz resonator. There are described methods for mounting it for one and four grouped apparatus.